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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/372,009 08/11/99 FUKUDA

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020227 QM12/0503
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EXAMINER

HARMON, C

ART UNIT

PAPER NUMBER

3721

DATE MAILED:

05/03/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/372,009

Applicant(s)

FUKUDA ET AL

Examiner

Christopher R Harmon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- 1) ☒ Responsive to communication(s) filed on 2/28/00.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☒ The proposed drawing correction filed on 28 February 2000 is: a) ☒ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☒ All b) ☐ Some * c) ☐ None of the CERTIFIED copies of the priority documents have been:
1. ☒ received.
2. ☐ received in Application No. (Series Code / Serial Number) _____.
3. ☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

- 14) ☐ Notice of References Cited (PTO-892)
- 15) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 16) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 17) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 18) ☐ Notice of Informal Patent Application (PTO-152)
- 19) ☐ Other: _____

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Response to Arguments

Drawings

1. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on 3/2/00 have been received.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 6-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuda et al. (US 5,125,217) in view of Simionato (US 4,660,356) and further view of Kreager (US 4,555,289).

Fukuda et al. disclose an apparatus (figure 1) for form/fill/seal packaging machine with a longitudinal sealer comprising a chute 115, package former 103, movable heater unit 55, servo motor 45, and air cylinder 78. In operation, the heating unit 55 moves against chute 115 by means of air cylinder 78 in order to seal packaging S. "...the pressure applied on the film material S for its vertical sealing by the vertical-seal belt 55

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can be controlled by adjusting the operation of the separation-adjusting servo motor 45.” (column 6, lines 48-51).

In order to retract the heating unit from the chute, “...servo motor 45 is activated...The two pull-down belts 30 and the vertical-seal belt 55 are thereby moved radially outward or inward with respect to the central axis of the tubular film material in a mutually coordinated manner.” (column 6, lines 30-39).

Fukuda et al. do not disclose a two chambered air cylinder, as in claims 10-11 and 16-17 for moving the heating unit. Simionato teaches selectively controlled stacked cylinders 9 and 10 (figure 1), acting along the same axis. The cylinders move belts 1, slides 7, rollers 4, etc. in order to contact and move the packaging material 3 downwards along chute 2. Simionato also teaches the possibility of substitution for the cylinders; “...it is obvious that the two cylinders 10 could be replaced by other control means, for example, by worm screw, cam or electromechanical control means, which can be operated either automatically or manually, with-out modifying this invention in any way.” (column 3, lines 12-16).

Simionato also teaches ducts 11-14 and respective solenoid valves 15a, 15b, 16a, 16b; control unit 17 (figure 2). The control unit effects switching of operation of cylinders 9 and 10 (column 3, line 5 – column 4, line 11). The cylinders 9 and 10 both operate to compress the material for the feeding operation. The compressive force has to be adequate in order for the device to function properly. “The stroke of the cylinders 9 can, of course, be calculated in order to adapt to tubular elements 2 of different

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diameters, whilst ensuring a constant feeding pressure.” (column 4, lines 9-11). Thus the compressive force is considered and described by Simionato.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to replace the cylinder of Fukuda et al. with a dual chambered air cylinder as taught by Simionato and switching means to move the heat sealing unit between various positions.

Concerning the limitation of lower/higher pressure, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to adjust the air pressure since it has been held that the provision of adjustability, where needed, involves only routine skill in the art. *In re Stevens*, 101 USPQ 284 (CCPA 1954). The piston of an air cylinder must have sufficient pressure applied at one end to overcome a state of rest. Once this level of pressure is achieved the piston moves to the physical limits of the other end of the cylinder. This operation is inherent of any functioning cylinder, therefore in order to propel an adjustable cylinder a desired distance to contact a web for a sealing operation the amount of pressure has to be taken in consideration to supply means for a complete seal. Fukuda and Simionato do not discuss the compressive force applied by the respective belt units (20, 1) but this would have to be considered as an important element in the functioning of the air cylinder(s) and would be obvious to adjust the pressure in a functioning range as applied to each respective cylinder.

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The air cylinder disclosed by Fukuda et al. is not specified as being controlled by two separate air pressures, nor having switching means between the two. Kreager teaches a method and apparatus forming fin-type back seal using cohesive sealants without externally applied heat in which rollers 72 and 82 are movable by means of air cylinders 80 and 88 (figure 1). The apparatus also comprises pressure regulator 92, air activation valves 96, and handle operators 98 and 100 (figure 4). "The air applied to cylinders 80 and 88 (usually at different pressures) is controlled by separate air activation valves." (column 3, lines 47-49). Air pressures are stated as "... (e.g., at 15-35 PSI) ..." (column 3, lines 41-42) and "... e.g., 0-15 PSI." (column 3, line 46) for the separate cylinders 88 and 80, respectively.

The pressure regulator 92 of Kreager supplies different pressures to two separate cylinders: "The pressure applied to the tracking roller 72 from cylinder 80 is usually less than the pressure applied to roller 82 through cylinder 88. The higher pressure on roller 82 is required for forming corrugations and accomplishing the cold seal." The switching of high/low pressure is performed by the pressure regulator 92 and air activation valves 96 to operate cylinders 80 and 88.

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to include the air pressure system (regulator, valves, etc.) as taught by Kreager with the packaging apparatus of Fukuda et al., in view of Simionato, in order to supply the dual air cylinder with adjustable high and low pressures to enable selective

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control/operation/adjustment of the dual air cylinder for desired lengths of time, while performing all desired forming/sealing/packaging functions.

4. Applicant's arguments filed 2/28/00 have been fully considered but they are not persuasive.

Regarding "controlling" the compressive force, Fukuda controls the compressive force by displacement of axle bearing 58, air cylinder 78, belt 55 as indicated by arrows in figure 8. Simionato controls the compressive force by means of cylinders 9 and 10 effectively moving belts 1 toward one another against web material 3 and guide element 2 (figure 1); see also column 2, lines 62-68. The adjustments for each respective cylinder along with the consideration for the enablement requirements of a functioning cylinder are adequate, as are obvious adjustability issues (also stated above).

In regard to the "other control means" (column 3, line 13) of Simionato, the "other control means" are cited to display the various forms of substitutions for an air cylinder in this environment. Simionato discusses compressive force as being adjustable by means of calculations. The compressive force has to be adequate in order for the device to function properly. "The stroke of the cylinders 9 can, of course, be calculated in order to adapt to tubular elements 2 of different diameters, whilst ensuring a constant feeding pressure." (column 4, lines 9-11). Thus the compressive force (constant feeding pressure) is considered and described by Simionato.

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Lower and higher pressures are fully disclosed by Kreager (stated above, page 5), in particular, for a compression activity. The pressure system comprising pressure regulator 92, air activation valves 96, and handles 98 and 100 operate cylinders 80 and 88 of Kreager is equivalent to the "switching means" of applicant. The system provides two separate adjustable and monitored pressures to two separate cylinders (80 and 88) to perform two separate intermittent operations.

5. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

6. In addition, please review previously cited US Patent # 5,743,066, by Fukuda et al.

The longitudinal sealer for bag maker-packaging machine with air cylinder 5, servo motor 4 (figure 3). This adjustable bag sealer performs similarly in that servo motor

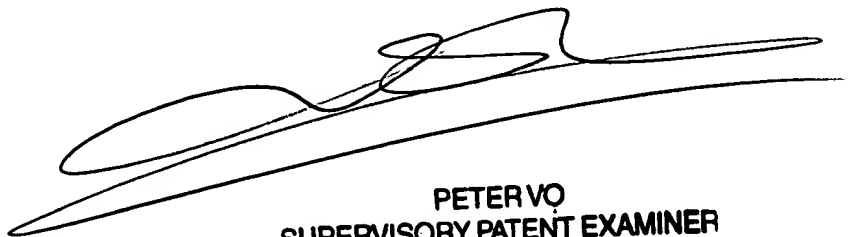
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4 performs the same function as would an additional cylinder in its place as per Simionato and modified by the teachings of Kreager.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher R Harmon whose telephone number is 703-308-8643. The examiner can normally be reached on Monday-Friday from 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 703-308-1789. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3579 for regular communications and 703-308-7769 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3576.

A handwritten signature in black ink, appearing to read 'PETER VO', is written over a horizontal line.

**PETER VO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700**